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compliments from the writer



Ormerod, Eleanor Anne

NOTES ON INJURIOUS INSECTS.

FOREST FLY, *Hippobosca equina*, Linn.



FOREST FLY, magnified (after Prof. Westwood); also life-size; egg-like pupa and toothed claw (magnified).

THE "Forest Fly," or "New Forest" Fly, as it is sometimes called in this country, known also by the names of the Spider Fly, Flat Fly, and Horse Louse-fly (scientifically, the *Hippobosca equina*), is a well-known trouble in the New Forest of Hampshire and its neighbourhood.

This fly is to be found on various kinds of animals, as horses, donkeys, cattle, dogs, and cats, to all of which its presence in the hair is a severe annoyance. Donkeys will sometimes roll and kick for an hour in their endeavours to get rid of the fly; cats roll and tumble about as if in great distress; but horses are the animals most especially infested by it, and the almost intolerable annoyance caused by the fly to horses unused to it is a very serious consideration with regard to animals recently brought to the Forest.

With their strong curved claws, bearing a kind of thumb-like process on each (see figure), the flies have an extraordinary power of holding on to the hairs, and besides can run to and fro, backwards, forwards, or sideways with a kind of crab-like movement, amongst the hair, or on the tender parts of the skin which they most frequent, so as by pulling, scratching, and tickling to perfectly terrify animals unacquainted with the infestation.

Horses unused to it become restive, and frequently unmanageable, plunge and kick and strike with their feet, in their endeavours to rid

themselves of the plague; and the more high-bred and high-spirited the horse, and sensitive to foreign touch on the skin, the greater the annoyance and consequent risks.

When on the wing taking its short flights, the fly appears of a brilliant shining black colour, and of shape and size figured at heading (life-size and magnified); but when at rest its single pair of wings are folded down along the back. When the abdomen of the female is swelled up by food, or by the presence of its single maggot before deposit, it looks not unlike a spider, whence its name of Spider Fly; when empty the flattened appearance gives the name of Flat Fly.

The flies are tough and bristly or hairy; when seen magnified the general colour is of a horny, shining dark brown, lighter along the middle of the abdomen, and with various small tawny yellow markings on the fore body between the wings, and a large yellow spot or ring on each side in front just behind the head. Head and eyes shining black or brown; face yellow, with a dark stripe up the middle. Mouth-parts are very peculiar, but for practical purposes it is enough to mention they include setæ which can be driven deep into the attacked animal. Legs tawny, variously striped and ringed with darker tints, and somewhat bristly; and the strong curved claws, of which there are two on each foot (each claw bearing a side tooth), are also dark coloured or black. The two wings not very transparent, and with strong dark veins towards the foremost part. Length of body about a quarter to a third of an inch, of spread of wings about two-thirds of an inch.

The very remarkable part in the history of this fly is that, like others of the genus *Hippobosca*, it only lives actively in the fly-state. *The flies do not lay eggs*, but the larvæ or maggots hatch, and are nourished up to their full growth within the abdomen of the females; one maggot only inside each fly. They then change to the pupal state, and are deposited in this state (or ready quite immediately to turn to it) in the shape of white roundish bodies often mistaken for eggs, and very like them, excepting that they are notched at one end. These rapidly change from white to a dark brown colour, somewhat resembling a laburnum-seed, and within this *puparium* the fly forms, and in due time escapes by cracking off the notched end of its hard covering.

According to what may be called regular record, the fly feeds by blood-sucking, and its piercers, or *setæ*, which resemble those of the gnat in their great length, point to this being the case; nevertheless *locally*, and by those well used to observation, it has been told me so often that they feed on the moisture amongst the hair, that some further investigation as to how far this occurs would be useful.

The following note is from an experienced local observer:—"They do not seem to bite or sting, but evidently find nourishment in the perspiration given off by cattle during the period of their activity, *i. e.*, the summer months. Well-groomed horses therefore afford least attraction for these flies."—(D. D. G.)

The point of the direct pain caused by the attack not being the chief cause of annoyance is thus noted in a good continental observation:—"They feed by blood-sucking; still it is less by their sting (or puncture) than by their crab-like movements on the skin that the horses are made restive."—(E. L. T.)

The parts most infested are those which are the most tender, and also those from which the animal has itself the most difficulty in removing the plague. Beneath the tail is the locality that is especially attacked; also the inner parts of the thighs, and, speaking more generally, the abdomen, flanks, and also the upper part of the fore legs near the body.

The following observations on method of attack, symptoms of its presence, and method of removal of the fly, are a portion of some notes placed in my hands by the courtesy of Mr. Thomas B. Goodall, F.R.C.V.S., Christchurch, Hants, omitting some points of technical detail:—

“A strange horse is alarmed and frightened because of his inability to dislodge the fly, its power of prehension being so great that the horse's tail is powerless to remove it, and it crawls over the body of the horse, and does not remain quiescent until it finds a thin part of the skin, where in the Forest ponies it may sometimes be seen in clusters. . . . When a strange horse has a ‘Forester,’ as the fly is called locally, on him, he shows symptoms which at once tell us who have experience in the matter what ails him. He has a *frightened* look, lays his ears back, and makes short stamps and kicks with his feet; and if the fly is not taken from him he will sometimes sweat profusely, kick violently, and even roll. Most strange horses become accustomed to it in a few days, but some never do.

“I do not think the fly ever goes into a stable of its own accord, and if the horse is freed from them before going into the stable he is safe from attack until he is taken out again; and the custom here is to search the horse well over, particularly in the fly's favourite haunts, before he is taken into the stable after being in the ‘fly’ district, *for we never find them away from the Forest*, unless they are taken by horses.

“There is some danger to one not accustomed to the habits of the fly, and also of the horse, in attempting to dislodge the fly. It will when disturbed make short flights from one part of the body to another, and then *run*, generally sideways. Strangers will sometimes endeavour to *knock it off*, which is useless, and increases the irritation of the horse. The only method is to clap the hand or fingers *flatly over the fly*, and then remove it, and it is killed by pressing the thumb-nail in the thorax lengthways.”—(T. B. G.)

In my own small experience, I have found moistening the fingers helped very much in securing the fly, as thus the wings were a little clogged, so that they were not at once serviceable again. Sometimes the fly may be secured and pinched in the fold of a handkerchief, or the following plan might answer:—Have a box, such as a wooden pill-box, in the pocket, and on the bottom of this have a little cotton-wool fixed, and on the cotton-wool some drops of benzine, and the lid fitted firmly on. When the fly is noticed on any accessible part, take off the box-lid, and quickly as possibly put box and wool over the fly. If this is done dexterously the fly will very shortly be stupefied, and if the lid is replaced directly the box is lifted the fumes within will last for several captures.

With regard to methods of prevention, Mr. Goodall wrote me:—“I really know of no specific for preventing attack, though wiping the horse over with a paraffin-rag renders him less inviting to the fly; but

when we know that it may settle on any part of the body it will be readily seen how inconvenient it would be to do this often or daily, and, as I have already said, we here simply catch and kill the fly."

The paraffin application is the only one mentioned by most of my correspondents, but still other dressings (where circumstances allow of their application) sometimes are effective. The following note was given me by Mr. D. D. Gibb, Ossemsley Manor Farm, Lymington, one of my constant contributors:—

"The common remedy adopted by those driving in the Forest with an unseasoned horse is to damp a cloth with paraffin and rub lightly over the animal, particularly the parts beneath, and under the tail, which are most subject to attack. For some years I have used with excellent results a carbolic sanitary fluid prepared by Mr. Johns (chemist), High Street, Southampton, which is clean and far from offensive in use, and effectual in keeping off Forest Flies. When added to hot water it mixes very readily, giving the water a milky appearance. For dressing or rubbing over with a wet cloth, two table-spoonfuls to a gallon of water would be sufficient. To wash animals over (if desired) one pint to twelve gallons of water would be the quantities. Doubtless McDougall's or Jeyes's preparations would serve the same purpose."

In continental publications extreme cleanliness and soap-washes applied to the affected parts are particularly dwelt upon.

This attack being mainly, if not entirely, confined to one locality in this country, I have rarely had it brought personally under my notice; but in the above observations I have endeavoured to give the most important points gathered by collation of information of English, French, German, and Dutch writers, and especially the observations of the late Prof. Westwood, Life President of our Entomological Society, and those of Dr. E. L. Taschenberg, of Halle, as to the life-history; and for practical points, information kindly given me by local referees acknowledged with their contribution.

From my own long attention to the subject I have a good deal of information in my hands, and should be happy to reply to any enquiry to the best of my power, and also to forward copies of this leaflet gratuitously to any applicant for themselves or for distribution.

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May, 1895.

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